

CLAIM AMENDMENTS

1. (Currently amended) A building sequence planning system for an automobile production line, said system comprising:

an input unit for inputting vehicle information of vehicles to be manufactured, the vehicle information including the number of vehicles residing or accumulated between two processes,

a processing unit for deciding an optimum building sequence based on the vehicle information inputted through said input unit, and

an output unit for externally outputting a building sequence schedule decided by said processing unit,

wherein said automobile production line is a mixed line including a first line and a second line respectively in parallel, and a third line branching from said ~~first~~ second line and joining with said first line ~~or said second line,~~

wherein said processing unit includes an initial offline sequence preparing unit for preparing an initial vehicle building sequence of the automobile production line based on the vehicle information inputting input to said input unit, ~~an initial lead time developing unit for developing the building sequence to preceding and succeeding processes by a lead time shifting for the automobile production line prepared by the initial vehicle building sequence prepared by said initial offline sequence preparing unit, a sequence evaluating unit for evaluating the building sequence based on conditions of an occupancy rate level, a minimum interval vehicle number, a maximum succeeding vehicle number, and a lot condition, as a penalty value, in accordance with restriction conditions,~~

~~an offline point sequence preparing unit for preparing another pattern of the vehicle building sequence at the offline point, a lead time developing unit for developing the building sequence at the offline point for another pattern of the vehicle building sequence prepared by said offline sequence preparing unit by using a lead time shifting by employing the number of vehicles residing or accumulated between two processes, and an evaluation determining and storing unit for deciding a building sequence with a minimum penalty based on the penalty value evaluated by said sequence evaluation unit, wherein said processing unit propagates the building sequence in a point in the automobile production line between two processes in the automobile production line, which corresponds to an assembly completion point, to preceding and succeeding processes with lead time shifting by employing the number of vehicles residing or accumulated between two processes, thereby deciding an optimum building sequence for each of the preceding and succeeding processes, and wherein said sequence evaluating unit evaluates the building sequence for the mixture line, which is prepared by said initial lead time developing unit, as a penalty value based on a sum of satisfying degrees, at all the points where the lead time shifting has been done~~ and operates to output said optimum building sequence by (i) calculating an evaluation value from the vehicle information, including an initial automobile building sequence, input to said input unit, and storing the evaluation value, (ii) calculating a new evaluation value from another, new automobile building sequence, (iii) comparing the new evaluation value with the stored evaluation value, (iv) adopting the new automobile building sequence when the new evaluation value is improved, (v) discarding the new automobile

building sequence when the new evaluation value is not improved, (vi) ending processing when repetitive searches have been completed, and (vii) outputting a most recently adopted automobile building sequence as said optimum building sequence.

2-4. (Canceled)

5. (Currently amended) A building sequence planning system for an automobile production line according to Claim 4, ~~wherein,~~ for wherein the vehicle information includes information relating to when a vehicle ~~which~~ has to pass a line twice because of work for two-tone color painting, ~~the lead time is modified by adding a time or the number of vehicles.~~

6-13. (Canceled)

14. (New) A building sequence planning system for an automobile production line according to Claim 1, wherein the processing unit shifts an assembly entry time of a vehicle to be assembled by a time corresponding to said number of vehicles residing or accumulated between said two processes.